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ABSTRACT

This paper describes the rationale for using a World Wide Web page linked with a database to share perceptions among diverse stakeholders in a field-based teacher education setting. The efficiency of the Web as an inquiry tool can make applied and empowering research possible despite severe time constraints. The second section of the paper gives an example of how this idea was tested in practice at Lewis-Clark State College (Idaho). The key question of the study was, "How much time and effort will it take to prepare the survey and analyze the results?" The perceptions of college faculty members, K-8 teachers, and teacher education students in a new field-based program were shared, analyzed, and commented on using easily constructed Web pages linked with a database. It is concluded that using a Web-based survey with a database is time efficient. (MES)

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Databases Linked to the Web: Facilitating Collaborative Inquiry in Teacher Education

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Abstract: This paper describes the rationale for using a web page linked with a database to share perceptions among diverse stakeholders in a field-based teacher education setting. The efficiency of the web as an inquiry tool can make applied and empowering research possible despite severe time constraints. The second section of the paper and gives an example of how this idea was tested in practice. The perceptions of college faculty members, K-8 teachers, and teacher education students in a new field-based program were shared, analyzed, and commented on using easily constructed web-pages linked with a database.

Introduction

The difficulties inherent in establishing comprehensive teacher education partnerships involving K-12 teachers and faculty from colleges of education are daunting. Whether these difficulties can be overcome in a specific setting is largely a function of communication. This point is made clearly in a recent article by several faculty members at Brigham Young University which describes, in candid detail, the challenges, successes and failures that accompany the building of long term partnerships with schools. "Even with a stable university faculty and low turnover, communication was poor. Too many schools, too many students, too many cooperating teachers created this problem. Disappointment followed. One teacher educator posed the dilemma this way: 'There are more opportunities to communicate and build relationships than ever before, but you don't have time to pursue and develop them, you only end up with hurt feelings and miscommunication'"(Bullough, 1999, p. 381).

The Need for Communication

The rationale for partnerships between K-12 schools and colleges of education for the purpose of simultaneously improving education has been convincingly made (Goodlad, 1994). Building and sustaining these partnerships requires meaningful and sustained communication. Informal and formal meetings, telephone and e-mail conversations and memos are all essential elements of communication, and each serves well in meeting specific types of communicative needs.

Bringing the spirit of effective and ongoing inquiry into the school environment is perhaps the most essential contribution the college partner brings to the table. Effective inquiry holds promise not only for improving teacher education, but also for helping teachers and schools improve the practice of K-12 education. Recognizing that the inquiry aspect of the partnership may be the one most at risk when the school and college cultures clash, it is particularly important to ensure that communication mechanisms are in place for inquiry-related activities.

Inquiry models that treat school personnel as *subjects* rather than an co-researchers, can be efficient in terms of time, but are not likely to serve well in a partnership (Lincoln & Guba, 1995). However, communication intensive collaborative research is very demanding of time, which is very likely to be a rare commodity among teachers and faculty involved in school partnerships.

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Potential of the Web-Database

Recent software advances allow relatively non-technically oriented users to create databases that are linked to web pages. This offers a powerful means to efficient and collaborative inquiry. A web site linked with a database allows information to be collected, analyzed, and reported with an ease unimaginable a few years ago. The simplicity and speed of collecting, analyzing, and reporting data thus has the potential to greatly facilitate collaborative inquiry.

One way to make use of the web-database combination is in gathering, summarizing, and sharing perceptions using a survey or questionnaire. Thoughtfully used technology can overcome some of the drawbacks traditionally encountered in survey research. Low response rates, due to the time and expense involved in sending out, completing and returning forms can be avoided. Lack of follow up communication can similarly be avoided as the cost and time involved in sharing results with all respondents becomes minimal. Using a web-based survey, respondents can easily submit their perspectives and participate fully in receiving and interpreting the overall results. With the technology of a database linked to the World Wide Web (WWW), the implementation of a well-designed survey as a means to gather and share the collective perceptions of a diverse group of individuals becomes possible and efficient.

Theory into Practice

In the early Fall of 1999 an opportunity to explore the methodology and effectiveness of inquiry using a database linked to the web presented itself at Lewis-Clark State College in Lewiston, Idaho. For nine years, the Lewis-Clark State College teacher education programs had worked very closely with partner schools. However, beginning with partial implementation in the 1998-1999 school year, and with full implementation in the 1999-2000 school year, year-long internships placed students in one school site for their final two semesters, intensifying the college/K-12 partnership. This new program required supervising faculty members to work on a daily basis with a small number K-12 teachers. Exploring the perceptions of teachers, students, and college faculty regarding this work in progress was of significant interest to those involved.

Getting Started

A formal study was initiated six weeks into the full-scale implementation of the year long internship. It began with the general question: *do the cooperating teachers, college faculty, and student interns share common perceptions about the early benefits and problems of the year-long elementary (K-8) internship program?* To develop specific survey items, members of the college faculty were consulted by phone and e-mail, asking them which issues they would most like to know about. The result was a 20 item survey, plus four biographical questions (school site, number of semesters involved in new program, affiliation, e-mail address).

The Questions

All 20 questions were multiple choice items which asked the respondents to share their perceptions on specific issues related to the year-long internship. The exact wording of the response choices varied, but in general they were: none, low, medium, or high. The topics addressed in the survey were:

1. Does the presence of the intern students benefit the K-8 students?
2. Does it appear that the internship experience is likely to be superior to the more traditional student teaching experience?
3. Is the amount of time spent in the schools properly balanced with time on campus?
4. How critical is the need for instruction on campus in each of these areas: classroom management, lesson planning, methods instruction?
5. How prepared are the internship students to teach each of these: special needs students, reading, math, writing, speaking and listening, science, art, music, PE, health
6. How prepared are students to develop lessons requiring integration of subject areas?
7. How prepared are students to use computer technologies in the classroom
8. How aware are you of the new standards the teacher education program has adopted?
9. How important is your voice in guiding the direction of the teacher preparation program?

1. Based on what you have directly observed, is the presence of LCSC students in the classroom benefiting K-8 students?	○ A
A. not that I can tell	○ B
B. possibly, to a limited extent	○ C
C. definitely yes, there is some benefit	○ D
D. there is clearly a very significant benefit	
2. Based on your experience so far, does (or will) participation in the internship year make LCSC students more ready to work as full time teachers when they complete their program?	○ A
A. not that I can tell	○ B
B. possibly, to a limited extent	○ C
C. definitely yes, there will be somewhat more ready	○ D
D. they will clearly be more ready	

Figure 1: Two sample survey items (of 20) shown in a web browser.

Preparing the WebPage and Database

From a methodological perspective, the key question of this study was *how much time and effort will it take to prepare the survey and analyze the results?* The process of developing the individual questions was similar to that of developing a paper and pencil survey: drafts of the proposed questions were shared with all faculty members involved in the internship and feedback was invited and received (this process was done primarily by e-mail). Once developed, the questions were placed into a *Claris Homepage* document (see Figure 1) , a process which took less than an hour. The major development work involved creating a *FileMaker Pro* database to store and analyze the survey data. Creating fields needed to input the data was relatively simple: 24 fields were created for that purpose, which took the author less than 30 minutes to complete. The next task was to create fields that would calculate the percentages for each response. This involved creating approximately 200 additional fields, a somewhat tedious process that took about 3 hours. Each question required four fields in order to determine whether the response was a, b, c, or d. For each of these 80 fields, a summary field was created to add up the total number of responses for that field. Finally, a calculation field was created for each of the 80 basic fields to calculate the percentage of responses for each item (see Figure 2).

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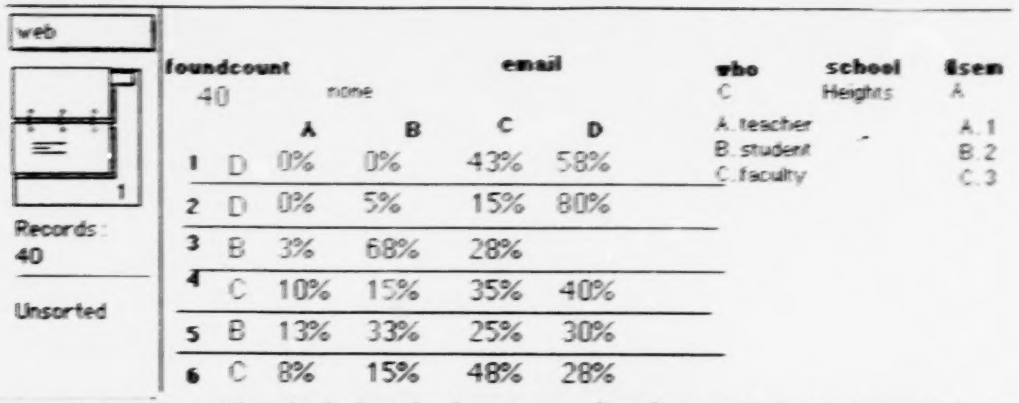
web

Records: 40

Unsorted

foundcount		email				who	school	fsem
40		none				C	Heights	A
		A	B	C	D	A. teacher		A. 1
1	D	0%	0%	43%	58%	B. student		B. 2
2	D	0%	5%	15%	80%	C. faculty		C. 3
3	B	3%	68%	28%				
4	C	10%	15%	35%	40%			
5	B	13%	33%	25%	30%			
6	C	8%	15%	48%	28%			

Figure 2: Partial record from the database showing one respondents demographic data (teacher, school name, semesters of involvement), that person's responses to the first six items (D,D,B,C,B,C) and the summarized totals for all 40 respondents for the first six items.

Round 1

Once the survey was placed on the Education Division's web server, faculty members were contacted and asked to fill out the survey as well as to request that they ask their K-8 colleagues and students to also fill out the survey. The initial request was to fill out the survey within one week. After 4 days it became apparent that more time for responding and an additional appeal would be necessary. For that reason, requests were e-mailed to 2-4 cooperating teachers in each of the nine internship sites and the faculty were reminded to ask their students to fill out the questionnaire. The deadline for completing the survey was extended an additional week.

At the two week deadline, 40 surveys were received, 20 (of 30) from K-8 teachers, 15 (of 30) from interns, and 5 (of 6) from the faculty. It appeared that the relatively low response rate from interns was a matter of communication – many of them were rarely on campus and used individual (home) e-mail accounts other than their college accounts (which is why they were not contacted by e-mail directly). As the surveys were submitted via the web the results were automatically summarized in the database. These results were not immediately made available via the web (although they could have been).

Round 2

After two weeks the results were made available on a results web page, which replaced the original web survey at the same site (see Figure 3). It would have been simple to display the overall results for each question by calling those results directly from the database. However, since a major purpose of this particular survey was to look for discrepant perceptions among the three groups (faculty, teachers, and interns), results for each of those groups were calculated by doing simple searches for each group's results and then entering those results *manually* into the web page. In a similar way, the results were analyzed in terms of the number of semesters (1,2, or 3) the respondent had been involved with the year long internship program. The entire summarizing process took approximately 3 hours for the author to complete.

Each respondent was then sent an e-mail message, telling them that the results were available for their viewing, and encouraging them to comment on the results within the next week. As comments were received they were added to the results page to be shared.

Somewhat surprisingly, very few comments were received. Comments were made via e-mail immediately after the survey was completed (before the group results were available) and other comments were made verbally after individuals had viewed the group results, but for the most part, respondents did not choose to share their comments and interpretations via e-mail. Two reasons for this were readily apparent in hindsight.

1. It would have been preferable for the respondents to be able to add comments right on the web site as they were reviewing the results (which could have been easily done). Instead, they had to e-mail their responses separately, a less convenient option..
2. A shorter survey and/or less analysis for respondents to react to would have been better. With 20 questions each analyzed along two different dimensions, the amount of data appeared to be somewhat overwhelming.

3. Overall, how well is the need to spend time on the LCSC campus balanced with the need to spend time in K-8 classrooms?

A. Too little time is spent in the college classroom

B. Just about the right amount of time is spent in the college classroom

C. Too much time is spent in the college classroom

	K-12 teachers	LCSC interns	LCSC faculty
A	5%	0%	0%
B	60%	67%	100%
C	30%	33%	0%
no response	5%		

	1st semester	2nd semester	3rd semester
A	5%	0%	0%
B	85%	38%	71%
C	5%	62%	29%
no response	5%		

comment 1: Once students begin their internship they should be here all of the time. Continuity is hard to develop when interns are only here part of the time. Take the days that you need to have them at LCSC and then have them attend intership full time for longer than a semester. Attend the school site during the first week of school, however.

Figure 3: Excerpt from a web browser showing results from one of the 20 items, including a follow-up comment from one of the respondents.

Lessons Learned

First, it is very clear that using a web-based survey with a database is time efficient. The amount of time needed to create, disseminate, analyze, and receive comments was very low compared to any other option. The database-web vehicle does enable people to easily share their points of view and to comment on the points of view of others – a great need in collaborative inquiry. Improvements that should be made to the process and cited in this example are consistent with the principles of good survey research: keep the number of questions to a minimum, and make it as easy as possible for respondents to participate.

An area to be explored further is finding ways to balance the need to openly share data with all respondents with the need to keep the results from being too detailed. For example, all the results were shared with the respondents. If, instead, only results that showed a somewhat significant difference of opinion between the three groups had been shared, a useful collaborative discussion would have occurred more easily. Further trials with this strategy are needed to determine whether limiting data in this manner maintains the integrity of the group's reactions while eliminating the need to wade through redundant data.

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